Three Years Data of Uterine Fibroids Patient Characteristics at West Java Top Referral Hospital

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Abstract

Background: Uterine fibroids are the most common benign tumor in female reproductive system and a major cause in declining their quality of live. Patient characteristics has high prevalence in black women, 40s, nulliparous, and early menarche. These characteristics are varied in some areas and considered in treatment decisions. The objectives of this study was to describe the uterine fibroid patient characteristics at Dr. Hasan Sadikin General Hospital, Bandung from 1 January 2013 to 31 December 2015.

Methods: A descriptive study was conducted to 255 medical records of patients with uterine fibroids at Dr. Hasan Sadikin General Hosiptal, Bandung from 1 January 2013 to 31 December 2015. This study was conducted from September to November 2016. The variables were the year of treatment, age, education, occupation, married status, menarche, abortion, parity, type of uterine fibroids, and treatment. The collected data were analyzed and presented using frequency tables and percentages.

Results: Most cases of uterine fibroids were discovered in 2014. The most characteristics with uterine fibroids were pre-menopausal age (41.18%), high school education (55.69%), housewife (63.14%), normal menarche (54.51%), married (92.16%), nulliparous (47.45%), no abortion (76.47%), multiple uterine fibroids (46.67%), and hysterectomy (58.04%).

Conclusions: The most combination of characteristics of patients with uterine fibroids is nulliparrous women in reproductive and pre-menopausal age with normal menarche.

Keywords: Age, menarche, parity, uterine fibroids

Introduction

Uterine fibroids are benign tumors from smooth muscle of the uterus and most commonly occur in the female reproductive system, especially in the forties.[1,2,3] In the United States[3], 60% of 35 years old African-American women have uterine fibroids. In Brazil[4], uterine fibroids occur most commonly in the 35-44 years, and among white race l. In Ghanaian women, this condition occurred <35 years old and the type was intramural uterine fibroids.[5] In Indonesia[6], this condition ranks second of all gynecological cancer. A study in Medan[7] in the period 2009–2011, uterine fibroids had high prevalence in the 40–49 years old, high school graduation, work as housewife, married, multiparous and the type was submucosal fibroids.

There are several factors suspected to be the cause of uterine fibroids such as socio-demographic, hormones, genetics, and lifestyle factors.[8] Menarche, parity, age, obesity, smoking, diet, and exercise are several predictors contributing to the development of uterine fibroids.[9] These factors can be assessed by identification of the patient characteristics and can be a source of information to consider treatment options.[1]

Dr. Hasan Sadikin General Hospital Bandung which is the top referral hospital in West Java has not yet published data on uterine fibroids patient characteristics. Based on this, the study was conducted to identify the uterine fibroids patient characteristics at Dr. Hasan Sadikin General Hospital Bandung.

Methods

A descriptive quantitative study was conducted involving medical records of uterine fibroid patients in the Department of

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Obstetrics and Gynecology, Dr. Hasan Sadikin General Hospital from 1 January 2013 to 31 December 2015 (3 years data). This study was conducted from September to November 2016 and approved by the Health Research Ethics Committee of the Faculty of Medicine of Universitas Padjadjaran, No 631/UN6.C1.3.2/ KEPK/PN/2016 and Dr. Hasan Sadikin General Hospital Bandung, No. 4740 / UN6.C1 / PP / 2016.

The inclusion criteria for the medical records were medical records consisting of information about the year of treatment, age, education, occupation, menarche, married status, parity, abortion, type of uterine fibroids, and treatment. While exclusion criteria were incomplete medical records according to the variables needed. There were 383 medical records during 3 years, however only 255 medical records met the inclusion criteria.

In terms of age, age was divided into four groups according to the women's uterine development, namely, the reproductive age (15–40 years), pre-menopause (41–46 years), menopause (47–51 years) and post-menopause (≥52 years). The intervals of menarche were divided based on the age of the first menstruation, namely, early menarche (<11 years), normal menarche (11–13 years), menarche tarda (14–16 years) and late menarche (≥17 years). Moreover, parity was divided into four groups based on the number of delivery, namely nulliparous (null birth), primiparous (first birth), multiparous (2–5 births), and grandemultiparous (> 5 births). The collected data were analyzed using a computer software and were presented by frequency tables and percentages.

Results

This study discovered that women aged 41–46 years had the highest percentage of uterine fibroids, followed by women aged 15–40 years. Most of the patients were high school graduates, housewives and married (Table 1).

In terms of menarche, girls in the age group 11–13 years had the highest percentage of this disease, followed by girls in the age group 14–16 years. The highest percentage of the case was in the never abortus, nulliparous and multiple group. There were some options to treat uterine fibroids. This study discovered

Table 1 Distribution Uterine Fibroids Patients characteristics in Dr. Hasan Sadikin General Hospital Bandung from 2013–2015

Variable	Classification	N	%
Years of treatment	2013	68	26.67
	2014	94	36.86
	2015	93	36.47
Age	15–40 years	95	37.25
	41–46 years	105	41.18
	4–51 years	44	17.25
	≥ 52 years	11	43.1
Education	Elementary school	32	12.55
	Junior high school	28	10.98
	Senior high school	142	55.69
	College	53	20.78
Occupation	Housewife	161	63.14
	Entrepreneur	12	4.71
	Employee	42	16.47
	Government employee	25	9.80
	Other	15	5.88
Married status	Unmarried	20	7.84
	Married	235	92.16

Table 2 Distribution of Uterine Fibroids Based on Obstetrics and Gynecology Status of Patients in Dr. Hasan Sadikin General Hospital Bandung from 2013–2015.

Variable	Categories	n	%
Menarche	< 11 years	10	3.92
	11–13 years	139	54.51
	14–16 years	98	38.43
	≥17 years	8	3.14
Abortus	0	195	76.47
	1	44	17.25
	>1	16	6.27
Parity	0 birth	121	47.45
	1 birth	38	14.90
	2–5 birth	87	34.12
	>5 birth	9	3.53
Type of uterine fibroid	Subserous	39	15.29
	Intramural	79	30.98
	Submucosa	18	7.06
	Multiple	119	46.67
Treatment	Medication	10	3.92
	Myomectomy	97	38.04
	Hysterectomy	148	58.04

that the most common treatment conducted to this condition was hysterectomy (Table 2).

Based on the combination of variables age, menarche, and parity on the incidence of uterine fibroid and treatment options this study discovered that the most cases of uterine fibroids in the reproductive age group had normal menarche (11–13 years) and nulliparous (Tables 3,4,5) .

In terms of the pre-menopause group, this study discovered a similar result as in the reproductive group. Most cases of uterine fibroids were patients who had normal menarche and nulliparous (Table 3).

Compared to other groups, the cases of uterine fibroids in the menopause group had a slightly different result. Most cases were still in patients who had normal menarche age but had more than two children (Table 4).

In this study there were small low cases of uterine fibroids in the post menopause age group. There were only 4.31% cases compared to other groups. Hence, most cases had menarche tarda and more than five children (Table 5).

Furthermore, treatment options based on the number of parity was hysterectomy, while based on age was myomectomy. A combination characteristics on hysterectomy was the most widely experienced by pre-menopause (41–46 years), menarche tarda (14–16 years) and multiparrous (2–5 births), while myomectomy was performed to women who were in the reproductive age (15–40 years), normal menarche (11–13 years), and nulliparous.

Discussions

Uterine fibroid is a benign tumor that causes the highest morbidity among women in reproductive age and fewer than in menopause. It consists of many smooth muscle cells and different types of connective tissue. Growth of the tumor presses to the multiple networks of myometrium and connective tissue, and causes the formation of pseudo-capsule that consists of lots of collagen fibers and blood vessels.[10,11] Hormones, gen, and growth factors were factors suspected to contribute to the development of uterine fibroids.[12]

This study discovered that most cases of uterine fibroids occurred in the pre-menopouse group. This result was in

Table 3 Combination of Age, Menarche, Parity on Treatment Option of Uterine Fibroid Based on Reproduction Age

Combination	n	Treatment		
		Medication	Myomectomy	Hysterectomy
A1M1 and,				
P1	4	0	3	1
P2	0	0	0	0
P3	0	0	0	0
P4	0	0	0	0
A1M2 and,				
P1	38	1	27	10
P2	8	1	6	1
P3	9	0	2	7
P4	0	0	0	0
A1M3 and,				
P1	17	2	11	4
P2	5	0	3	2
P3	12	0	2	10
P4	0	0	0	0
A1M4 and,				
P1	2	0	2	0
P2	0	0	0	0
P3	0	0	0	0
P4	0	0	0	0

Note: A= Age: A1 (15-40 years), A2 (41-46 years), A3 (47-51 years) and A4 (≥52 years), M = Menarche: M1 (< 11 years), M2 (11-13 years), M3 (14-16 years) and M4 (≥17 years), P = Parity: P1 (0 birth), P2 (1 birth), P3 (2-5 birth), P4 (>5 birth)

accordance with a study by Ziemerman et al.[3] that stated the age group 40-49 years has a high prevalence of uterine fibroids. Uterine Fibroids occurring in menstruating women, showed the reliance on ovarian steroids, especially estrogen and progesterone that had a role in the development of this disease.[10] Another study stated that at the premenopause age, increase urine concentration of estrogen and androgen compared to normal women, could be a predictor in the development of uterine fibroids.[13]

Based on the education status, uterine fibroids occur most commonly in women who had already graduated from senior high school and college. The level of education was suspected to increase the stress level of a person.[8] This was stated by Shen et al.[8] that higher level of education was one of the other factors on developing uterine fibroids, due to stress level. Stress in a person who had a higher education was related to the changing endocrine system in women via steroid hormone, due to the disturbance of HPA axis responses to stress that result in changes of metabolism steroid hormone, and particularly led to the development of uterine fibroids.[8,14]

In this study, normal menarche age had the highest frequency of all groups. This result is in accordance with the study of He et al.[15] in China which stated that ≤14 years old women have a higher percentage of uterine fibroids compared to 15–16 and ≥17 years old groups.[15] It suspected that there are other factors contributing to uterine fibroids, such as smoking, exercise and alcohol consumption. Those factors make women more susceptible to develop uterine fibroids.[8]

Table 4 Combination of Age, Menarche, Parity on Treatment Option of Uterine Fibroid Based on Pre-menopause Age

Combination	n	Treatment		
		Medication	Myomectomy	Hysterectomy
A2M1 and,				
P1	3	1	1	1
P2	1	0	1	0
P3	0	0	0	0
P4	1	0	0	1
A2M2 and,				
P1	27	1	15	11
P2	11	0	3	8
P3	18	1	1	16
P4	1	0	1	0
A2M3 and,				
P1	16	1	7	8
P2	7	0	1	6
P3	16	0	3	13
P4	0	0	0	0
A2M4 and,				
P1	1	0	1	0
P2	1	0	0	1
P3	1	0	0	1
P4	1	0	0	1

Note: A= Age : A1 (15-40 years), A2 (41-46 years), A3 (47-51 years) and A4 (≥52 years), M = Menarche : M1 (< 11 years), M2 (11-13 years), M3 (14-16 years) and M4 (≥17 years), P = Parity : P1 (0 birth), P2 (1 birth), P3 (2-5 birth), P4 (>5 birth)

Additionally, nulliparous women had the highest frequency of uterine fibroids. Uterine fibroids affect fertility due to inflammation of the endometrium, inhibition transport of gamete embryo in the uterus, blood supply and anatomical disorders in the uterine cavity caused by development of the tumor. This condition has a devastating effect on fertility.[16,17] Childbearing age women preparing for her first pregnancy, and have difficulty getting pregnant should be aware of the possibility of obstetric complication risks caused by uterine fibroids.[16]

Although cases of uterine fibroids in the multiparous group were second rank compared to other groups, this study discovered that this situation existed. This finding was in contradictory with the existing theory. Multiparity reduced the risk of uterine fibroid.[13] After the delivery myometrium will return to its normal state, such as weight, blood flow, and the size of cells by apoptosis and differentiation through the process of involution reduced blood supply to the myometrium.[9] This explanation of uterine fibroids in the multiparous group is still unknown.

Furthermore, multiple uterine fibroids were the most type in this study. This finding was not similar to a study conducted in Surakarta which stated that the highest number of uterine fibroid is intramural, while the multiple is the least of all.[17] This result was also different with a study conducted by Sarkodie et al.[5] in Ghana. There was no clear explanation about the differences, whether there was spesific factors in some areas related to the pathogenesis and histologically findings.

Additionally, the most treatment performed was hysterectomy. This was consistent with a

Table 5 Combination of Age, Menarche, Parity on Treatment Option of Uterine Fibroid Based on Menopause Age

Combination	n	Treatment		
		Medication	Myomectomy	Hysterectomy
A3M1 and,				
P1	0	0	0	0
P2	1	1	0	0
P3	0	0	0	0
P4	0	0	0	0
A3M2 and,				
P1	6	0	2	4
P2	2	0	0	2
P3	15	1	0	14
P4	1	0	0	1
A3M3 and,				
P1	6	0	1	5
P2	2	0	1	1
P3	8	0	1	7
P4	1	0	1	0
A3M4 and,				
P1	0	0	0	0
P2	0	0	0	0
P3	1	0	0	1
P4	1	0	0	1

Note: A= Age: A1 (15-40 years), A2 (41-46 years), A3 (47-51 years) and A4 (≥52 years), M = Menarche: M1 (< 11 years), M2 (11-13 years), M3 (14-16 years) and M4 (≥17 years), P = Parity: P1 (0 birth), P2 (1 birth), P3 (2-5 birth), P4 (>5 birth)

previous study in Medan.[7] Hysterectomy is the main therapeutic indication of uterine fibroids in the United States.[18] According to the management of the National Institute for Health and Care Excellence (NICE), hysterectomy may be performed if medication treatment failed and women did not want preserved their fertility.[16] This study discovered an interesting result, that in some cases, hysterectomy was performed in women who had never delivered. The reason why this operation was perfomed was unclear.

In this case, the most combination of characteristics uterine fibroids was nulliparous. This disease most occurs in nulliparous women with normal reproductive age and normal menarche, followed by nulliparous women with premenopause and normal menarche. This condition becomes a particular concern to nulliparous women to early detect their reproductive system related to uterine fibroids.

Limitations of this study are the data collection from medical records, which are incomplete since not all patient characteristics related to the risk factor for uterine fibroids are recorded, such as anthropometry, family history, medical history, and lifestyles such as smoking, exercise, medicine.

The conclusion of this study, nulliparous in women is the most characteristics in uterine fibroids, which occurred in reproductive and premenopausal age with normal menarche and myomectomy as treatment.

References

1. Aleksandrovych V, Bereza T, Sajewicz M, Walocha JA, Gil K. Uterine fibroid : common features of widespread tumor. Folia Med

Cracov. 2015;55(1):61–75.
2. Pérez-López FR, Ornat L, Ceausu I, Depypere H, Erel CT, Lambrinoudaki I, et al. EMAS position statement: Management of uterine fibroids. Maturitas. 2014;79(1):106–16.
3. Zimmermann A, Bernuit D, Gerlinger C, Schaefers M, Geppert K. Prevalence, symptoms and management of uterine fibroids: an international internet-based survey of 21,746 women. BMC Womens Health. 2012;12(6);1–11.
4. Boclin Kde L, Faerstein E. Prevalence of self-reported medical diagnosis of uterine leiomyomas in a Brazilian population: demographic and socioeconomic patterns in the Pro-Saúde Study. Rev Bras Epidemiol. 2013;16(2):301–13.
5. Sarkodie BD, Botwe BO, Ofori EK. Uterine fibroid characteristics and sonographic pattern among Ghanaian females undergoing pelvic ultrasound scan: a study at 3-major centres. BMC Womens Health. 2016;16(10) :1–6.
6. Baziad A. Endokrinologi ginekologi. 3rd ed. Jakarta: Media Aesculapius FKUI. 2008.
7. Ginting LY, Rasmaliah, Jamedi. Karakteristik penderita mioma uteri yang dirawat inap di RSUD DR. Pringadi Medan tahun 2009-2011. Jurnal Gizi Kesehatan Reproduksi dan Epidemiologi. 2012;1(1):1–9.
8. Shen Y, Xu Q, Xu J, Ren ML, Cai YL. Environmental exposure and risk of uterine leiomyoma: an epidemiologic survey. Eur Rev Med Pharmacol Sci. 2013;17(23):3249–56.
9. Parker WH. Etiology, symptomatology, and diagnosis of uterine myomas. Fertil Steril. 2007;87(4):725–36.
10. Khan AT, Shehmar M, Gupta JK. Uterine fibroids : current perspectives. Int J Womens Health. 2014; 29(6):95–114.
11. Sparic R, Mirkovic L, Malvasi A, Tinelli A. Epidemiology of uterine myomas: a review. Int J Fertil Steril. 2016;9(4): 424–35.
12. Ciavattini A, Di Giuseppe J, Stortoni P, Montik N, Giannubilo SR, Litta P, et al. Uterine Fibroids: pathogenesis and interactions with endometrium and endomyometrial junction. Obstetrics and Gynecology International. 2013;2013(2013):173184.
13. Blake RE. Leiomyomata uteri: hormonal and molecular determinants of growth. J Natl Med Socc. 2007;99(10):1170–84.
14. Wise LA, Li S, Palmer JR, Rosenberg L. Depressive symptoms and risk of uterine leiyomyomata. Am J Obstet Gynecol. 2015;212(5):617–35.
15. He Y, Zeng Q, Dong S, Qin L, Li G, Wang P. Associations between uterine fibroids and lifestyles including diet, physical activity and stress: a case-control study in China. Asia Pac J Clin Nutr. 2013;22(1):109–17.
16. Cook H, Ezzati M, Segars JH, McCarthy K. The impact of uterine leiyomyomas on reproductive outcomes. Minerva Ginecol. 2010;62(3):225–36.
17. Trivedi P, Abreo M. Predisposing factors for fibroids and outcome of laparoscopic myomectomy in infertility. J Gynecol Endosc Surg. 2009;1(1):47–56.
18. Vannuccini S, Clifton VL, Fraser IS, Taylor HS, Critchley H, Giudice LC, et al. Infertility and reproductive disorders: impact of hormonal and inflammatory mechanisms on pregnancy outcome. Hum Reprod Update. 2016;22(1):104–15.
19. Kurniasari T. Karakteristik mioma uteri di RSUD Dr. Moewardi Surakarta periode Januari 2009 - Januari 2010. Institutional Repository Universitas Sebelas Maret. 2013 [cited 2017 January 6]. Available form: https://eprints.uns.ac.id/4595/.
20. Baird DD, Harmon QE, Upson K, Moore KR, Barker-Cummings C, Baker S, et al. A prospective, ultrasound-based study to evaluate risk factors for uterine fibroid incidence and growth: methods and results of recruitment. J Womens Health (Larchmt). 2015;24(11):907–15.